



US 20190233790A1

(19) **United States**(12) **Patent Application Publication**  
**BASKAR et al.**(10) **Pub. No.: US 2019/0233790 A1**(43) **Pub. Date: Aug. 1, 2019**(54) **METHOD OF CULTURING EUKARYOTIC CELLS****Publication Classification**(71) Applicant: **GENENTECH, INC.**, South San Francisco, CA (US)(72) Inventors: **Dinesh BASKAR**, Bangalore (IN); **Jenny HSIUNG**, Mountain View, CA (US); **Woon-Lam Susan LEUNG**, San Mateo, CA (US); **Inn H. YUK**, Berkeley, CA (US)(73) Assignee: **GENENTECH, INC.**, South San Francisco, CA (US)(21) Appl. No.: **16/218,323**(22) Filed: **Dec. 12, 2018****Related U.S. Application Data**

(63) Continuation of application No. 14/480,366, filed on Sep. 8, 2014, now Pat. No. 10,190,084, which is a continuation of application No. 13/383,829, filed on Sep. 10, 2012, now abandoned, filed as application No. PCT/US2010/041082 on Jul. 6, 2010.

(60) Provisional application No. 61/223,313, filed on Jul. 6, 2009.

(51) **Int. Cl.****C12M 1/00** (2006.01)**C12M 1/34** (2006.01)**C12N 5/00** (2006.01)**C12M 1/36** (2006.01)**C12M 3/06** (2006.01)(52) **U.S. Cl.**CPC ..... **C12M 23/14** (2013.01); **C12M 41/32**(2013.01); **C12N 5/0018** (2013.01); **C12M****41/12** (2013.01); **C12M 41/48** (2013.01);**C12N 2500/05** (2013.01); **C12M 41/26**(2013.01); **C12M 29/20** (2013.01); **C12M****29/10** (2013.01); **C12M 27/16** (2013.01);**C12M 23/28** (2013.01)

(57)

**ABSTRACT**

An apparatus and method to maintain pH within a range conducive for cell growth in a bicarbonate-containing cell culture system without the addition of base. The method relies on the gas transfer characteristics of the bioreactor system to modulate the CO<sub>2</sub> transfer to and from the cell culture such that the pH of the cell culture can be maintained within a desired range.

